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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

DEFENSE DIVISION

AUG 13 1969

The Honorable
The Secretary of Defense

Attention: Assistant Secretary of Defense
(Comptroller)

Dear Mr. Secretary:

The General Accounting Office has examined into the use of fixed-price contracts for the procurement of studies and investigations of research and development (R&D) matters by the Air Force Rome Air Development Center (RADC), Rome, New York (Code 56508).

We believe that there is a need for improvement in the practices that have been followed in the procurement of R&D studies and investigations at RADC. We therefore recommend that appropriate action be taken to improve these practices at RADC and that a study be made to determine the need for improved practices in the procurement of R&D studies and investigations at other Air Force R&D activities.

We also believe that there is a need to clarify the Armed Services Procurement Regulation (ASPR) so as to provide better guidance to procurement personnel in the selection of the appropriate contract type for procurement of R&D studies and investigations. We understand that a proposed change to the ASPR which relates to the use of fixed-price contracts for R&D is currently under study within the Department of Defense (DOD). This study includes considerations of the use of fixed-price contracts for R&D studies and investigations. We believe that the findings and conclusions discussed in this report warrant consideration by those officials who are performing this study.

Our findings are discussed in further detail hereinafter.

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RAIX awarded about 1,000 fixed-price study and investigation contracts valued at about \$112 million during the 4½-year period ended June 30, 1968. Since these studies and investigations were extremely technical in nature and lent themselves only to very rough estimates of the amounts and types of scientific and technical efforts that might be required to complete them, the contracts provided only that the contractors would within specified periods of time attempt to complete the work. Contracts contained the following clause:

"The contractor shall with due diligence commencing on the date of receipt of this contract furnish at the prices stated all necessary facilities, materials and qualified personnel, managing and directing the same in an effort to complete the work specified below within and for the term specified below."

Even though the contracts did not require completion of the work they also did not stipulate that the contractors would furnish the number of hours of scientific and technical efforts that were considered in establishing the fixed prices. Rather, the contracts provided only that in determining whether the contractors had performed with due diligence it was agreed and understood that the contracting officers could require that the contractors provide the hours and types of effort which were considered in negotiating the fixed prices. Contract clauses used in this regard were as follows:

"In determining whether or not the Contractor has performed with due diligence hereunder, it is agreed and understood that the Contracting Officer may measure the amount and quality of the Contractor's effort against the representations made by the Contractor in the negotiation of this contract."

"In performance of the above listed item, the contractor agrees the Contracting Officer, in his sole discretion, may require the following effort in the categories and hours specified even though it leads to the Contractor's working beyond the term specified above."

The effort which the contracting officer could require was expressed in the following manner in a typical contract:

<u>CATEGORY</u>	<u>HOURS</u>
Staff Programmer	2520
Staff Engineer	1160
Senior Programmer	2080
Programmer	960

However, the contracts did not provide an effective means of informing RADC project engineers and contracting officers of the amounts of effort that had been applied by the contractors. The contracts frequently did not contain any requirements for disclosure by the contractors as to the number of hours of effort which had been furnished. Where such requirements were included in the contracts they were inadequate in that the contractors were only required to report in interim progress reports the efforts furnished during the periods reported. The contractors were not required to report the total efforts furnished to date nor to relate the efforts furnished to the efforts which the contracting officers were authorized to require.

The contracts did, however, provide that Government representatives could examine contractor records to verify or determine the efforts that had been furnished. Agency audits show that the efforts furnished usually varied significantly from the efforts considered in establishing the fixed prices. For example, our analysis of the RADC summary on audits for fiscal year 1968 showed that for 86 of 184 contracts audited the contractors had provided about 50,000 less hours of effort than the contracting officers were authorized to require. We estimate the value of these unfurnished hours to have been about \$800,000 based upon an hourly value of \$16, including overhead and general and administrative expense and profit.

These audits also showed that on many contracts more hours were furnished than could have been required. RADC officials feel that such overages in effect compensate for the shortages on other contracts. While there may be some merit to this position, it seems evident that the significant variances in the amount of scientific and technical effort provided as compared to that considered during the negotiations demonstrate that the use of the fixed-price type of contract for such work was inappropriate.

The agency audits were generally performed after the contractors had discontinued their work under the contracts. It was therefore generally impracticable to demand that the contractors perform additional work. However, price adjustments could be considered. RADC policy has called for consideration of seeking price adjustments whenever an audit discloses a shortage of more than 10 percent. The RADC policy also provides that where such shortage has resulted from either technical breakthrough or efficiency the contractor is to be permitted to retain the resultant additional profit. During the 4½-year period ended June 30, 1968, RADC only obtained price adjustments from 11 contractors totaling about \$200,000, or less than 0.2 percent of the value of the contracts awarded.

An illustration of what has occurred under these practices is provided by contract F30602-67-C-0076. This contract authorized the contracting officer to require 5,618 hours of effort for which RADC was to pay nearly \$75,000. The contract contained no provision for reporting to RADC the hours furnished. The contract was completed on February 29, 1968. About two months later, April 24, 1968, RADC was informed by the Defense Contract Audit Agency that the contractor had furnished only 2,491 hours. Thus, the contractor had furnished 3,127 fewer hours than the contracting officer could require.

The contracting officer concluded that the contractor could not be required to continue work under this contract since the work was already being carried forward under a new contract.

He therefore considered seeking a price adjustment. However, the administrative contracting officer objected. He stated that the RADC Project Monitor had previously accepted the services and the contractor had already been advised that the services called for by the contract had been accepted by the Government. For these reasons the contracting officer concluded that any price adjustment would be voluntary on the part of the contractor. A decision was then reached not to seek a price adjustment. Another factor in this decision was the finding that the contractor had furnished about 1,500 more hours than could have been required under the terms of another contract which was completed at about the same time.

Although it appears that either the cost-reimbursement or fixed-price contract form could be acceptable under the guidance provided by the ASPR it seems to us that the cost reimbursement form is the more appropriate form for procuring these studies and investigations at RADC.

Section 3-405.6 provides that the cost-plus-a-fixed-fee contract is suitable for use when, among other things, the contract is for the performance of research, or preliminary exploration or study, where the level of effort required is unknown; and where measuring achievements in contract performance does not lend itself to the subjective evaluation required in cost-plus-award-fee contracts. It provides on the other hand--Section 3-403(b)--that a fixed-price level of effort contract may be appropriate where the level of effort desired can be identified and agreed upon in advance of performance.

In applying this guidance to the procurements discussed in this report, it appears that judgement must be applied in determining whether the level of effort required or desired is

known or unknown. With respect to the RADC procurements, it appears that the level of effort required or desired should be considered as unknown since the amounts and types of efforts furnished usually vary significantly from the amounts and types of efforts considered in negotiating the contracts.

We were advised by RADC that the cost-plus-a-fixed-fee type of contract was used from 1952 to 1963; that they paid only for the hours they received and that it worked fine. Nevertheless, in the early 1960's they changed to the fixed-price type to reduce (1) administrative effort and (2) budgetary uncertainty resulting from cost overruns. The timing of this change also corresponds with the heavy emphasis that the DOD cost reduction program placed on converting from cost-plus-a-fixed-fee to fixed-price contracts.

Although it is generally accepted that fixed-price contracts require less administration than cost reimbursement contracts, we see no reason why there should be a significant reduction in total administrative effort resulting from the use of the fixed-price type of contract for the kind of procurement discussed in this report.

Further, it would appear that cost overruns could be avoided through appropriate administrative practices since ceilings are established under cost-type contracts which contractors may not exceed (except at their own risk) without prior approval or subsequent ratification of the contracting officers.

An additional advantage from using the cost-reimbursement type of contract is the potential for savings in fee/profit. Although there appears to be no additional risk to the contractor associated with the fixed-price contract for the type of effort discussed in this report, the profit rates negotiated tend to be higher than the fee rates under cost-plus-a-fixed-fee contracts.

Information developed by RADC for fiscal years 1966 through 1968 shows that the average profit rates negotiated by RADC with commercial organizations on fixed-price contracts for studies and investigations were approximately nine percent, or one percentage point more than the average fee rates negotiated for cost-plus-a-fixed-fee contracts. Similar data for not-for-profit institutions shows a difference of about three percentage points.

Our limited examination of cost-plus-a-fixed-fee contracts for studies and investigations negotiated with commercial organizations by the Directorate of R&D Procurement of the Air Force Systems Command's Aeronautical Systems Division also showed the average fee rates to be about one percentage point less than the profit rates negotiated by RADC for its fixed-price contracts for studies and investigations.

A reduction of one percentage point in the fee/profit rates would amount to annual savings of about \$170,000 based upon the RADC fiscal year 1968 volume of \$18.8 million in fixed-price contracts for studies and investigations.

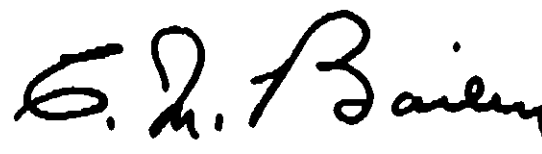
We have concluded from our examination that in procurements of R&D studies and investigations of the type discussed in this report the Government's interests are generally better served by the use of the cost-reimbursement form of contract. Where it is determined to be in the Government's interest to use the fixed-price form, we believe the contracts should (1) specifically require that the contractors must furnish the efforts proposed in negotiating the fixed prices or efforts of equivalent value and (2) that at appropriate points during the performance and at the completion of the contracts the contractors must appropriately report and certify to the level of effort furnished under the contracts.

Also, we are of the opinion that the ASPR needs to be clarified so as to provide better guidance to procurement personnel in the selection of the appropriate contract type for procurement of R&D studies and investigations.

We shall appreciate an expression of your views within 60 days on the matters discussed in this letter. In the event a report is subsequently issued to the Congress, your comments will be included. If you or your representatives wish to discuss these matters or require additional information, please contact Mr. Harold H. Rubin, Associate Director; code 129, extension 4515.

Copies of this letter are being sent to the Director of Defense Research and Engineering and the Secretary of the Air Force for their information.

Sincerely yours,



Director